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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,422	09/20/2001	Takayuki Fujioka	9792909-5242	2711

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EXAMINER
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BRIGGS, NATHANAEL R

ART UNIT	PAPER NUMBER
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2871

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/957,422	<b>Applicant(s)</b> FUJIOKA ET AL.	
	<b>Examiner</b> NATHANAEL R. BRIGGS	<b>Art Unit</b> 2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/5/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 31 October 2008 have been fully considered but they are not persuasive. Applicant argues that *Tsuda* in view of *Nakamura* and in further view of *Itoh* fails to disclose first, wherein there is a uniform concave gap having a size equal to about a minimum resolution of the photolithography between any two adjacent pillar-shaped bodies; and second, that because the gap between adjacent protrusions is as small as about 0.5  $\mu\text{m}$ , a resin with a thickness of 500 nm (= 0.5  $\mu\text{m}$ ) applied to the gaps between the pillars would result in a flat gap, rather than a concavity.
2. Examiner notes that both Applicant's arguments contradict each other. The minimum resolution of photolithography was found to be 0.5  $\mu\text{m}$ , as presented in the remarks of the previous action (see *Tsuda* column 13, lines 1-9). Therefore, *Tsuda* discloses wherein there is a uniform concave gap having a size equal to about a minimum resolution of the photolithography between any two adjacent pillar-shaped bodies.
3. Second, true, *Tsuda* indeed discloses wherein the thickness of the second resin is 500 nm (= 0.5  $\mu\text{m}$ ; see *Tsuda* column 10, lines 14-23). However, Applicant fails to consider the thickness of the *first resin film* 32a when alleging a resulting flat concave gap. Indeed, with the first resin layer having a thickness of 1.2  $\mu\text{m}$  (see *Tsuda* column 9, lines 66-67) having a gap between adjacent pillars of 0.5  $\mu\text{m}$ , and having a second resin of thickness 500 nm (= 0.5  $\mu\text{m}$ ) applied within the gap, the diffuse reflector would have

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concave gaps, since the thickness of the first resin layer is *double* the thickness of the second resin layer. Therefore, Applicant's arguments are not persuasive.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**5. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (US 5,936,688) in view of Nakamura et al. (US 5,847,789), and in further view of Itoh et al. (US 6,094,252).**

6. Regarding claim 1, Tsuda discloses a method of manufacturing a diffusing reflector (see figures 2A-E and 5A-H, for instance) having processes of preparing a substrate (31); forming a first resin film having photosensitivity (32a) on said substrate (31); providing a gathering of adjacent pillar-shaped bodies (32b) isolated from each other through patterning (33) of said resin film (32a) with the photolithography; deforming gently (32c) said adjacent pillar-shaped bodies (32b) through a reflow (column 10, lines 8-11); forming an uneven surface layer (37) having the maximum inclination angle of under 12° (see Fig. 2B) by coating said gently deformed pillar-shaped bodies (32c) and covering with a second resin (34a) open flat spaces (34a) located between said isolated adjacent pillar-shaped bodies (32b), thereby minimizing an occurrence of a flat surface area on said substrate (37); and forming a metal film (36) on gathering of said gently deformed uneven surface layer (34c), wherein (see

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*Response to Arguments*) said first resin film is patterned by straight connected lines that form a continuous polygonal pattern (column 17, lines 32-36), said straight lines providing a continuous and substantially uniform gap between said polygonal pillar-shaped bodies thereby forming a rectilinear honeycomb-like pattern, said gap having a size equal to about a minimum resolution of said photolithography (column 13, lines 1-9), and a thickness of the second resin (34a) is about 500 nm (column 10, lines 14-23). However, Tsuda does not expressly disclose wherein there is located one concave gap between any two adjacent isolated pillar-shaped bodies, or wherein the upper end portions of said any two adjacent isolated pillar-shaped bodies are higher than a lower end portion of said one concave gap in the thickness direction of the diffusing reflector.

7. Regarding claim 1, Nakamura discloses a method of manufacturing a diffuse reflector (see figures 1 and 2, for instance), includes steps of coating said gently deformed pillar-shaped bodies (4, 5) and covering with a second resin (6) open flat spaces (d3) located between said isolated pillar-shaped bodies (4, 5) to form one concave gap (d3) between any two adjacent isolated pillar-shaped bodies (4, 5), thereby minimizing an occurrence of a flat surface area on said substrate (2); and forming a metal film (7) on gathering of said gently deformed uneven surface layer (6).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the step of Nakamura in the method of Tsuda. The motivation for doing so would have been to gain good polarizing performance while obtaining diffusion properties to enhance the display, as taught by Nakamura (column 8, lines 21-27).

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9. Regarding claim 1, Itoh discloses a method of manufacturing a diffuse reflector (see figure 5F, for instance), wherein the upper end portions of said any two adjacent isolated pillar-shaped bodies (7a) are higher than a lower end portion of said one concave gap (low portions of layer 8) in the thickness direction of the diffusing reflector.

10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the structure of Itoh in the method of Tsuda in view of Nakamura. The motivation for doing so would have been to realize a high quality LCD capable of conducting a bright display without any effect of parallax, as exemplified by Itoh (column 13, lines 15-18). Claim 1 is therefore unpatentable.

11. Regarding claim 2, Tsuda in view of Nakamura and in further view of Itoh discloses a method of manufacturing a diffusing reflector as claimed in claim 1 (see figures 2A-E and 5A-H, for instance), wherein said maximum inclination angle is about 10° (Fig. 2B). Claim 2 is therefore unpatentable.

12. Regarding claim 4, Tsuda in view of Nakamura and in further view of Itoh discloses a method of manufacturing a diffusing reflector as claimed in claim 1 (see figures 2A-E and 5A-H, for instance), wherein said reflow process is a heat treatment under the temperature of about 220° C (column 10, lines 12-13). Claim 4 is therefore unpatentable.

13. Regarding claim 5, Tsuda in view of Nakamura and in further view of Itoh discloses a method of manufacturing a diffusing reflector as claimed in claim 1 (see figures 2A-E and 5A-H, for instance), wherein gathering of polygonal pillar-shaped bodies (32c; column 17, lines 32-36) isolated each other by the divided patterning of

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said resin film (34a) by said photolithography is provided. Claim 5 is therefore unpatentable.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANAEL R. BRIGGS whose telephone number is (571)272-8992. The examiner can normally be reached on 9 AM - 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs

1/26/2009

/Andrew Schechter/

Primary Examiner, Art Unit 2871